

PHYS-2018: Great Ideas in Science
Physics Module Project, Fall 2007
Project in Atomic, Nuclear, and Particle Physics

Students will break up into 4 groups and present an oral presentation and submit a term paper that contains a minimum of 6 pages and due on **November 6, 2007**. **Your oral presentations are to last no longer than 30 minutes!** The group will lose points if you go over that time limit and individuals are not to talk *fast* to try and get every time in on time. Practice your talk first to make sure you don't go over. The topic of your project is to be one of the topics presented below. In order to get students to interact with others in the class for which they have not yet interacted, the 4 groups will be:

- **Group 1:** Melanie Angles, Josh Courtney, Avani Javer, Ryen Lapham, Alexander Munjal, Jessica Smith. (Presentation on 10/30.)
 - **Group 2:** Joseph Brewer, Emily Garr, Tori Justus, Jennifer Lamine, Kristian Provchy, Whitney Trotter. (Presentation on 10/30.)
 - **Group 3:** Christine Brown, Taylor Hartly, Petya Kovachka, Sharon Latham, Tony Ragle, Sharat Vallurupalli. (Presentation on 11/1.)
 - **Group 4:** Noelle Brown, Jessica Hooper, Haley Klimecki, Laura Lusk, Katherine Schiermeyer. (Presentation on 11/1.)
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Project topics to choose from (one per group, no duplicate projects):

1. The Einstein-Podolsky-Rosen Paradox and how John Bell solved this paradox.
2. The discovery of alpha, beta, and gamma particles.
3. The use of nuclear power by humans (both fission and fusion).
4. The history and current description of CERN.
5. Why the Superconducting Super-Collider lost funding and why was it being built?
6. How did Heisenberg come up with the uncertainty principal?

7. The two types of radiation – how each effect humans and other lifeforms (both destructively and constructively).
8. String theory.
9. Any miscellaneous topic on either atomic, nuclear, or particle physics approved by the instructor.